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Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	09/894,898	BUTZBERGER ET AL.	
	Examiner	Art Unit	
	Myriam Pierre	2654	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on 05 January 2006.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) 1-36 is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) 1-36 is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

Response to Amendment

1. Applicant's arguments filed 01/05/2006 regarding Office Action of 10/05/2005, the proposed changes are approved by the examiner; amended claims 1, 11, 18, and 34-35; and previously presented claims 27, 29, and 31; and canceled claims 7.

Response to Arguments

2. The applicant's arguments have been fully considered by they are not persuasive for the following reasons:

Rejection of claims 1-6 and 8-36 under U.S.C. 103

Applicant argues that Brown (5,719,997) merely instantiates selected portions of the grammar over time; Brown's instantiation is allocation of memory and implements top level grammar in Fig. 5 (such as SIZE) and implements sub-grammar in Fig. 8, (such as "LARGE" "MEDIUM" "SMALL"), moreover, Brown's phoneme is demonstrated in Fig. 1 element 120, thus Brown's instantiation is allocation of memory via hierarchical grammar structure: top level grammar, sub-grammar, and phoneme, col. 4 lines 14-23.

Applicant argues that Brown does not explicitly teach data structures by a communication channel by a remote computer, or that the set of data structures is generated by the speech recognition system using information provided at least in part by a remote computer. Examiner respectfully disagrees. Brown discloses memory allocation via instantiating of grammar and Ehsani et al (2002/0032564) disclose the recognition "grammar", in which states are implemented as data structure. Ehsani describes the recognition "grammar", which uses

"phonetic" transcription, "word" sequences, and probability (states) to process the voice commands (Page 11, column 0212). Ehsani further discloses the remote access via a communication channel via a voice telephony server with speech recognition for remote access of databases via voice commands (page 11, paragraph 0200) in order to extend the capability to access external data bases or control applications or devices, as taught by Ehsani (paragraph 0200). In this regard, the examiner respectfully maintains the rejection of claims 1, 2, 8-26, 28, 30 and 32-35.

Applicant argues that Brown does not teach data structures by a communication channel by a remote computer, or that the set of data structures is generated by the speech recognition system using information provided at least in part by a remote computer. Examiner points to Brown in view of Ehsani et al (2002/0032564). Ehsani teaches voice telephony server with speech recognition for remote access of databases via voice commands (page 11, paragraph 0200) in order to extend the capability to access external data bases or control applications or devices, as taught by Ehsani (paragraph 0200). Ehsani further teaches (Uses an application of recognition "grammars" via "remote" voice control (Page 11, column 0200)...Grammar such as word, phone, and states are used in data structure. Ehsani describes the recognition "grammar", which uses states that are implemented in a data structure. Ehsani describes the recognition "grammar", which uses "phonetic" transcription, "word" sequences, and probability (states) to process the voice commands (Page 11, column 0212).

Applicant argues that Brown (5,719,997) merely instantiates selected portions of the grammar over time; Brown's instantiation is allocation of memory and implements top level grammar in Fig. 5 (such as SIZE) and implements sub-grammar in Fig. 8, (such as "LARGE"

"MEDIUM" "SMALL"), moreover, Brown's phoneme is demonstrated in Fig. 1 element 120, thus Brown's instantiation is allocation of memory (col. 4 lines 14-23) via top level grammar, sub-grammar, and phoneme.

Applicant argues that Brown does not teach data structures by a communication channel by a remote computer, or that the set of data structures is generated by the speech recognition system using information provided at least in part by a remote computer. Examiner points to Brown in view of Ehsani et al (2002/0032564). Ehsani teaches voice telephony server with speech recognition for remote access of databases via voice commands (page 11, paragraph 0200) in order to extend the capability to access external data bases or control applications or devices, as taught by Ehsani (paragraph 0200). Ehsani further teaches (Uses an application of recognition "grammars" via "remote" voice control (Page 11, column 0200)...Grammar such as word, phone, and states are used in data structure. Ehsani describes the recognition "grammar", which uses states that are implemented in a data structure. Ehsani describes the recognition "grammar", which uses "phonetic" transcription, "word" sequences, and probability (states) to process the voice commands (Page 11, column 0212).

Applicant argues that Ehsani (2002/0032564) fails to suggest the novel invention. The simple argument stating that Brown and Ehsani (either singly or in any combination in any permissible combination) fails to disclose the novel invention is not grounds for traversing the rejection. Both prior art, Brown and Ehsani, teach the claimed limitation, which in combination, would have been obvious to one of ordinary skill in the art, thus one would have been motivated to combine Ehsani's disclosed phrase recognition voice control with Brown's large vocabulary

speech recognition system to implement a speech recognition system for the purpose of enabling users to have greater access to information by using a remote computer.

Applicant argued that grammar used in processing speech signals are not provided by a remote computer. Examiner respectfully disagrees. Ehsani implements grammar used to process the speech signal provided by a remote computer or server via a voice telephony server with speech recognition for remote access of databases via voice commands (page 11, paragraph 0200). In this regard, the examiner respectfully maintains the rejection of claims 3-7, 16-17 and 36.

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

4. Claims 1-6, 8-36 are rejected under 35 U.S.C. 103(a) as being unpatentable over Brown et al. (5,719,997) in view of Ehsani et al. (2002/0032564).

As for claim 1, Brown teaches a method for allocating memory in a speech recognition system comprising the steps of:

acquiring a first set of data structures that contain a grammar,

a word sub-grammar, a phone sub-grammar and a state sub-grammar, each of the sub-grammars related to the grammar (Fig 1, col. 3, lines 41-42);

acquiring a speech signal (speech input, column 1, lines 26-28);

performing a probabilistic search using the speech signal as an input, and using the first set of data structures as possible inputs ("...mixture probability processor...grammar processor" column 1, lines 39-40);

and allocating memory for one of the sub-grammars when a transition to that sub-grammar is made during the probabilistic search ("...evolutional grammar" instantiated when needed "column 8, lines 8-18, lines 11-23 and column 2, lines 16-18; "de-instantiated..." column 2, lines 23-25").

Brown et al. do not explicitly teach implementing a remote computer.

However, Ehsani et al. do teach wherein the first set of data structures is generated by the speech recognition system based at least in part in part on a grammar provided by a remote computer (Voice telephony server with speech recognition for remote access of databases via voice commands page 11, paragraph 0200).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to combine Brown et al.'s data structure into Ehsani's remote appliance/computer because this would provide users with flexibility, thus users have the capability to access external data bases or control applications or devices, as taught by Ehsani (page 11 paragraph 0200 and page 13 paragraph 0230-0231).

As to claim 2, which depends on claim 1, Brown et al. teach

that the probabilistic search is a Viterbi beam search (column 1, lines 41-42).

As to Claim 3, which depends on claim 1, Brown et al. do not explicitly teach sending data structures through a communication channel by a remote computer.

However, Ehsani do teach that the set of data structures for a voice-user interface is sent through a communication channel by a remote computer and that the set of data structures is generated by the speech recognition system using information provided at least in part by a remote computer (Voice telephony server with speech recognition for remote access of databases via voice commands (page 11, paragraph 0200).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to use Brown et al.'s data structure into Ehsani's remote appliance/computer because this would optimize both the design and performance of speech applications by generating means via a remote control appliance or computer desktop application, as taught by Ehsani (page 11 paragraph 0200-0202).

As to Claim 4, which depends on claim3, Brown et al. do not explicitly teach web page.

However, Ehsani do teach a set of data structures included in code that defines a web page and data structures associated with one or more web pages ("voice page(s)" or "codes" is/are represented by data (data structure) for both structure and content of the Web page, and "enables interaction with the Web page using audio input from speech" page 13, paragraph 0231).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to use Brown et al.'s data structure into Ehsani's voice access of web

page(s) because this would provide the user with interaction with Web page using audio input speech or tones(s). (Ehsani, page 11 paragraph 0200-0202).

As to Claim 5 ,which depends on claim3, Brown et al. do not explicitly teach one web page.

However, Ehsani do teach a set of data structures included in code that defines a web page and data structures associated with one or more web pages ("voice page(s)" or "codes" is/are represented by data (data structure) for both structure and content of the Web page, and "enables interaction with the Web page using audio input from speech" page 13, paragraph (0231; data structures are "voice page" instructions for a conventional Web page and includes speech application in Fig. 6).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to use Brown et al.'s data structure into Ehsani's voice access of web page(s) because this would enable the user access to "voice pages", thus the user can use their voice rather than filling out interactive forms on the Web using a keyboard or mouse, as taught by Ehsani, page 13 paragraph 0230-0231.

As to Claim 6, which depends on claim 1, Brown et al. do not explicitly teach data structure selection via a remote computer.

However, Ehsani do teach a set of data structures (voice-interface application database located in telephone server) is selected by a remote computer (internet) (telephone input controls Internet applications, voice server, linked over the Internet, page 11 paragraph 200).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to use Brown et al.'s data structure into Ehsani's remote access of web page(s) because this would enable the voice based server to control Internet applications because speech recognition technology is being used to facilitate communication where the use of input modalities is impossible or inconvenient, as taught by Ehsani., page 11 paragraph 0200.

As to Claim 8, which depends on claim 1, Brown et al. teach

acquiring a second set of data structures that contain a second grammar, a second word sub-grammar, a second phone sub-grammar, and a second state sub-grammar, each of the second sub-grammars related to the second grammar (Fig. 8, second grammar, $node_{cb}$, is related to the sub-grammar, Fig. 5 "size") (The data structure for instantiations of HMM are used to allocate memory, which will replace grammar by "de-instantiating grammar" that is no longer needed. De-instantiating grammar includes sub-grammars because non-terminal tables are used to define all "sub-grammars" with they system. And non-terminal tables are an EHMM (de-instantiated or Ephemeral HMM) creation table. Instantiated portions of the grammar are de-instantiated are replaced by others that are instantiated. Instantiations and de-instantiations are done during the speech recognition processing. Column 4, lines 19-24; column 2, lines 23-24; column 12, lines 15-16; and column 12, lines 13-14; column 9, lines 58-60; and column 9, lines 11-16).

As to Claim 9, Brown in view of Ehsani, disclose all the limitations of claim 8 upon which claim 9 depends on, Brown further discloses:

the second set of data structures replace the first set of data structures (Fig. 8, second grammar, $node_{cb}$, "large medium small" is replaces the sub-grammar "size" in Fig. 5; lines 19-24; column 2, lines 23-24)

A to Claim 10, Brown in view of Ehsani, disclose all the limitations of claim 8, upon which claim 10 depends on, Brown further discloses:

the second set of data structures is acquired while the speech recognition system is operating (the grammar relates to inputs that have already been received and processed, instantiation of HMM, allocating memory space, establishing data structure within space needed to process phone scores, col. 2 lines 24-27 and col. 4 lines 14-21; col. 3 lines 24-29; thus the establishing of data structures when processing phone scores and grammar processing are acquired while the recognizer is operating because the recognizer is necessarily operating thru the HMM in order to process the instantiation of HMM in memory space, real time instantiation).

As to claim 11, Brown teaches of a speech recognition system, a method for recognizing speech comprising the steps of:

acquiring a first set of data structures that contain a grammar,
a word sub-grammar, a phone sub-grammar and a state sub-grammar, each of the sub-grammars related to the grammar structures (The data structure for instantiations of HMM are used to allocate memory, the recognition systems includes "phone, "word" "grammar" and "sub-grammars". Column 4, lines 19-24; column 11, lines 39-41 and column 3, lines 40-45);

acquiring a speech signal (speech input, column 1, lines 26-28);

performing a probabilistic search using the speech signal as an input, and using the first set of data structures as possible inputs (Fig 1);

allocating memory for one of the sub-grammars when a transition to that sub-grammar is made during the probabilistic search (Grammar processor (sub-grammars) causes the word probability processor to instantiate (allocate memory), column 8, lines 11-14).

computing a probability of a match between the speech signal and an element of the sub-grammar for which memory has been allocated ("speech input " is compared to "stored acoustic features representative of words" (examiner is reading this as 'memory') contained in a selected grammar, column 1, lines 26-30").

Brown et al. do not explicitly teach implementing a remote computer.

However, Ehsani teach wherein the first set of data structures is generated by the speech recognition system based at least in part in part on a grammar provided by a remote computer (Voice telephony server with speech recognition for remote access of databases via voice commands (page 11, paragraph 0200).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to combine Brown et al.'s data structure into Ehsani's remote appliance/computer because this would provide users with flexibility, thus users have the capability to access external data bases or control applications or devices, as taught by Ehsani page 11 paragraph 0200-0200.

As to Claim 12, which depends on claim 11, Brown et al. teach

the probabilistic search is a Viterbi beam search ("beam" searching..."Viterbi...", column 1, lines 41-42).

As to Claim 13, which depends on claim 11, Brown et al. teach

acquiring a second set of data structures that contain a second grammar, a second word sub-grammar, a second phone sub-grammar, and a second state sub-grammar, each of the second sub-grammars related to the second grammar (Fig. 8, second grammar, $node_{cb}$, is related to the sub-grammar, Fig. 5 "size") (Column 4, lines 19-24; column 2, lines 23-24; column 12, lines 15-16; and column 12, lines 13-14; column 9, lines 58-60; the data structures for instantiations of HMM are used to allocate memory, which will replace grammar by "de-instantiating grammar" that is no longer needed. De-instantiating grammar includes sub-grammars because non-terminal tables are used to define all "sub-grammars" with they system. And non-terminal tables are an EHMM (de-instantiated or Ephemeral HMM) creation table. Column 4, lines 19-24; column 2, lines 23-24; column 12, lines 15-16; and column 12, lines 13-14; column 9, lines 58-60).

As to Claim 14, which depends on claim 11, Brown et al. teach

the second set of data structures replace the first set of data structures (Fig. 8, second grammar, $node_{cb}$, "large medium small" is replaces the sub-grammar "size" in Fig. 5; lines 19-24; column 2, lines 23-24)

As to Claim 15, which depends on claim 13, Brown et al. teach

the second set of data structures is acquired while the speech recognition system is operating (real time instantiating grammar, the grammar relates to inputs that have already been received and processed, instantiation of HMM, allocating memory space, establishing data structure within space needed to process phone scores, col. 3 lines 24-29; col. 2 lines 24-27 and col. 4 lines 14-21; thus the establishing of data structures when processing phone scores and grammar processing are acquired while the recognizer is operating because the recognizer is necessarily operating thru the HMM in order to process the instantiation of HMM in memory space).

As to Claim 16, which depends on claim 11, Brown et al. do not explicitly teach web page.

However, Ehsani do teach a set of data structures included in code that defines a web page and data structures associated with one or more web pages ("voice page(s)" or "codes" is/are represented by data (data structure) for both structure and content of the Web page, and "enables interaction with the Web page using audio input from speech" page 13, paragraph (0231).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to use Brown's data structure into Ehsani's voice access of web page(s) because this would provide the user with interaction with Web page using audio input speech or tones(s) (Ehsani page 13 paragraph 0230-0231).

As to Claim 17, which depends on claim 15, Brown et al. teach do not explicitly teach one web page.

However, Ehsani do teach a set of data structures included in code that defines a web page and data structures associated with one or more web pages ("voice page(s)" or "codes" is/are represented by data (data structure) for both structure and content of the Web page, and "enables interaction with the Web page using audio input from speech" page 13, paragraph (0231; data structures are "voice page" instructions for a conventional Web page and includes speech application in Fig. 6).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to use Brown et al.'s data structure into Ehsani's voice access of web page(s) because this would enable the user access to "voice pages", thus the user can use their voice rather than filling out interactive forms on the Web using a keyboard or mouse, as taught by Ehsani, page 13 paragraph 230.

As to claim 18, Brown teaches a method for recognizing speech comprising the steps of:

acquiring a first set of data structures that contain a top level grammar and a plurality sub-grammars, each of the sub-grammars hierarchically related to the grammar and to each other (column 3, lines 14-15 and column 8 lines 65-67 and column 9, lines 1-4) ;

acquiring a speech signal (speech input, column 1, lines 14-17);

performing a probabilistic search using the speech signal as an input, and using the first set of data structures as possible inputs ("...mixture probability processor...grammar processor" column 1, lines 39-40);

allocating memory for specific sub-grammars when transitions to those specific sub-grammars are made during the probabilistic search (Grammar processor ("sub-grammars") causes the word probability processor to "instantiate" (allocate memory), column 8, lines 11-14); and

computing probabilities of matches between the speech signal and elements of the sub-grammars for which memory has been allocated ("speech input " is compared to "stored acoustic features representative of words" (examiner is reading this as 'memory') contained in a selected grammar, column 1, lines 26-30").

Brown et al. do not explicitly teach implementing a remote computer

However, Ehsani do teach wherein the first set of data structures is generated by the speech recognition system based at least in part in part on a grammar provided by a remote computer (Voice telephony server with speech recognition for remote access of databases via voice commands (page 11, paragraph 0200).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to combine Brown et al.'s data structure into Ehsani's remote appliance/computer because this would provide users with flexibility, thus users have the capability to access external data bases or control applications or devices, as taught by Ehsani (page 11 paragraph 0200 and page 13 paragraph 0230-0231).

As to Claim 19, which depends on claim 18, Brown et al. teach

the top level grammar includes one or more word sub-grammars, the word sub-grammars including words that are related according to word-to-word transition probabilities ("N-tuple grammar", column 11, line 45.)

As to claim 20, which depends on claim 19, Brown et al. teach

each word in a word sub-grammar includes one or more phone sub-grammars, the phone sub-grammars including phones that are related according to phone-to-phone transition probabilities ("Word probability processor 125 contains a) prototypical word models-Illustratively Hidden Markov Models (HMMs)--for the various words that the system of FIG. 1 is capable of recognizing, based on concatenations of phone representations." column 4, lines 14-17).

As to claim 21, which depends on claim 20, Brown et al. teach

each phone in a phone sub-grammar includes one or more state sub-grammars, the state sub-grammars including states that are related according to state-to-state transition probabilities ("Three state...phone representation...each state...phone probability processor generates tri-phone probabilities from component", column 10, lines 58-64).

As to claim 22, which depends on claim 21, Brown et al. teach

the probabilities of matches between the speech signal and elements of the sub-grammars for which memory has been allocated is computed using one or more probability distributions

associated with each state ("Hidden Markov Models with multivariate Gaussian distribution" column 10, lines 38-41").

As to claim 23, which depends on claim 22, Brown et al. teach

that when a word is allocated in memory, an initial phone for the word and an initial state for the initial phone are also allocated in memory ("stores a lexicon of phonetic word spellings for the vocabulary words which are keyed on the word index. The Phonetic Lexicon table is used to build an internal structure when instantiating an EHMM", column 12, lines 26-27).

As to claim 24, which depends on claim 23, Brown et al. teach

one subsequent states are allocated in memory until the end of the phone is reached, the allocation based on a transition probability at each state ("Phonetic table... are loaded into the grammar processor. Column 13, lines 30-31").

As to claim 25, Brown in view of Ehsani, which depends on claim 24, Brown et al. teach

one subsequent phones are allocated in memory until the end of the word is reached, the allocation based on a transition probability at each phone ("...input comprises phone scores that were generated by phone probability processor...column 5, lines 25-29 and Fig 2").

As to claim 26, which depends on claim 21, Brown et al. teach

when a state probability falls below a state threshold, the state is de-allocated from memory. ("...drop below it, it can be safely assumed that that portion of the network relates to

input that has already been received and processed and it is at that point that the model is de-instantiated. " column 2, lines 41-43)

As to claim 27, which depends on claim 26, Brown et al. teach

the state threshold is dynamically adjustable (HMM requires different instantiation for each different appearance of the word in question within the grammar, col. 4 lines 19-26 and col. 9 lines 25-45).

As to claim 28, which depends on claim 21, Brown et al. teach

that when a phone probability falls below a phone threshold, the phone is de-allocated from memory ("...the HMM are instantiated when needed and de-instantiated when no longer needed, called EHMMs" column 9, lines 57-60 and "HMM have first risen above a predefined threshold and thereafter all drop below it...process...de-instantiated, column 2, lines 40-45").

As to claim 29, which depends on claim 28, Brown et al. teach

the phone threshold is dynamically adjustable (col. 10 lines 62-67 and col. 11 lines 1-5).

As to claim 30, which depends on claim 21, Brown et al. teach

that when a word probability falls below a word threshold, the word is de-allocated from memory. ("...drop below it, it can be safely assumed that that portion of the network relates to input that has already been received and processed and it is at that point that the model is de-instantiated. " column 2, lines 41-43)

As to claim 31, which depends on claim 21, Brown et al. teach

the word threshold is dynamically adjustable (word probability score processor is expanded via the phrase path, col. 4 lines 27-42, 65-67 and col. 11 lines 12-17; thus score is dynamically adjustable based on the phrase path).

As to claim 32, which depends on claim 26, Brown et al. teach

that when all the states associated with a phone are de-allocated from memory, the phone is de-allocated from memory ("By de-instantiated we mean that, at a minimum, phone score processing and the propagation of hypothesis scores into such portions of the grammar, e.g., a particular HMM, column 9, lines 12-15 and grammar comprises of words column 11, lines 39-41 and "HMM are instantiated only as needed an de-instantiated when no longer needed, column 9, lines 57-60)"

As to claim 33, which depends on claim 32, Brown et al. teach

that when all the phones associated with a word are de-allocated from memory, the word is de-allocated from memory ("By de-instantiated we mean that, at a minimum, phone score processing and the propagation of hypothesis scores into such portions of the grammar, e.g., a particular HMM, column 9, lines 12-15 and grammar comprises of words column 11, lines 39-41 and "HMM are instantiated only as needed an de-instantiated when no longer needed, column 9, lines 57-60)".

As to claim 34, Brown teaches of a method for allocating memory in a speech recognition system comprising the steps of:

acquiring a set of data structures that contain a grammar and one or more sub-grammars related to the grammar; (grammar processor, non-terminal grammatical rules are used to dynamically generate finite-state sub-grammars comprising of word; column 11, lines 39-40)

acquiring a speech signal (recognizing speech and other inputs; column 1, lines 14-16);

performing a probabilistic search using the speech signal as an input, and using the first set of data structures as possible inputs (grammar instantiated in response to any particular input utterance; column 8, lines 55-56); and

allocating memory for a selected one or more of the sub-grammars when a transition to the selected sub-grammar is made during the probabilistic search (rather, as processing of input speech begins, grammar processor causes word probability processor to instantiate; initial portion of the grammar, column 8, lines 14-16).

Brown et al. do not explicitly implementing a remote computer

However, Ehsani et al. teach wherein the first set of data structures is generated by the speech recognition system based at least in part in part on a grammar provided by a remote computer (Voice telephony server with speech recognition for remote access of databases via voice commands; page 11, paragraph 0200).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to combine Brown et al.'s data structure into Ehsani's remote appliance/computer because this would provide users with flexibility, thus users have the

capability to access external data bases or control applications or devices, as taught by Ehsani, page 11 paragraph 0200 and page 13 paragraph 0230-0231.

As to claim 35, Brown et al. teach in a speech recognition system, a method for recognizing speech comprising the steps of:

(a) acquiring a set of data structures that contain a grammar and one or more sub-grammars related to the grammar. (grammatical rules; generate finite-state sub-grammars comprising of word; column 11, lines 39-40); (b) receiving spoken input signal (recognizing speech and other inputs; column 1, lines 14-16); (c) using one or more of the data structures to recognize the spoken input (data structure used to process phone scores, column 4, lines 22-23 and phone representation is a phonetic model of speech signal; column 4, lines 6-7); (d) while the speech recognition system is operating, acquiring a second set of data structures that contain a second grammar and one or more sub-grammars related to the second grammar (Fig 14); and (e) repeating steps (b) and (c), using the second set of data structures in step (c). (word probability processor contains; data structure for instantiation of HMM; column 4, lines 18-23 and Fig 14).

Brown et al. do not explicitly implementing a remote computer

However, Ehsani et al. do teach wherein the first set of data structures is generated by the speech recognition system based at least in part in part on a grammar provided by a remote computer (Voice telephony server with speech recognition for remote access of databases via voice commands; page 11, paragraph 0200).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to combine Brown et al.'s data structure into Ehsani's remote appliance/computer because this would provide users with flexibility, thus users have the capability to access external data bases or control applications or devices, as taught by Ehsani, page 11 paragraph 0200 and page 13 paragraph 0230-0231.

As to Claim 36, Brown et al. teach of a speech recognition system, a method for recognizing speech comprising the steps of:

(b) receiving spoken input signal (speech input, column 1, and lines 14-17); (c) using one or more of the data structures to recognize the spoken input (Data structure is used for memory, which comes from the word probability, the word probability is getting it's data from spoken input. column 1, 24-28 and column 4, lines 19-24); (d) while the speech recognition system is operating, acquiring a second set of data structures from the first remote computer or from a second remote computer, the second set of data structures containing a second grammar and one or more sub-grammars related to the second grammar (While the speech recognition system is operating, the figure shows that it will loop back to the input signal to find the next words until it reaches the end of the sentence, Fig 1); and (e) repeating steps (b) and (c), using the second set of data structures in step (c). (Fig 1 and Fig 14).

Brown et al. do not teach (a) acquiring from a first remote computer a set of data structures that contain a grammar and one or more sub-grammars related to the grammar.

Ehsani do teach (a) acquiring from a first remote computer a set of data

structures that contain a grammar and one or more sub-grammars related to the grammar (Uses an application of recognition "grammars" via "remote" voice control (Page 11, column 0200); grammar such as word, phone, and states are used in data structure. Ehsani describes the recognition "grammar", which uses "phonetic" transcription, "word" sequences, and probability (states) to process the voice commands; page 11 column 0212).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to combine Brown et al.'s data structure into Ehsani's remote appliance/computer because this would provide users with flexibility, thus users have the capability to access external data bases or control applications or devices, as taught by Ehsani, page 11 paragraph 0200 and page 13 paragraph 0230-0231.

Conclusion

5. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

6. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Myriam Pierre whose telephone number is 703-605-1196. The examiner can normally be reached on Monday – Friday from 5:30 a.m. - 2:00p.m.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Richemond Dorvil can be reached on (571) 272-7602. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

MP 03/17/2006

RICHEMOND DORVIL
SUPERVISORY PATENT EXAMINER